WHAT IS CLAIMED IS:

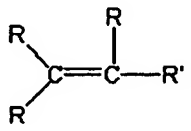
1. A heat transfer composition comprising:

   (a) at least one fluoroalkene of Formula I:

   $$XCF_zR_{3-z} \quad (I)$$

   where X is a C_2 or a C_3 unsaturated, substituted or unsubstituted, alkyl radical, R is independently Cl, F, Br, I or H, and z is 1 to 3, said heat transfer composition having a Global Warming Potential (GWP) of not greater than about 150.

2. The heat transfer composition of claim 1 wherein said at least one fluoroalkene is a compound of Formula II:



(II)

   where each R is independently Cl, F, Br, I or H

   R' is $(CR_2)_nY$,

   Y is CRF_2

   and n is 0 or 1.

3. The heat transfer composition of claim 2 wherein Y is CF_3.

4. The heat transfer composition of claim 3 wherein at least one R on the unsaturated terminal carbon is not F.

5. The heat transfer composition of claim 4 wherein at least one R on the unsaturated terminal carbon is H.

6. The heat transfer composition of claim 2 wherein n is 0.

7. The heat transfer composition of claim 2 wherein Y is CF_3 and n is 0.

8. The heat transfer composition of claim 1 wherein said at least one fluoroalkene comprises at least one tetrafluoropropene (HFO-1234).

9. The heat transfer composition of claim 8 wherein said at least one fluoroalkene further comprises at least one pentafluoropropene (HFO-1225).

10. The heat transfer composition of claim 1 wherein said at least one fluoroalkene further comprises at least one pentafluoropropene (HFO-1225).
11. The heat transfer composition of claim 8 wherein said at least one tetrafluoropropene (HFO-1234) comprises at least one compound in which the unsaturated terminal carbon has not more than one F substituent.
12. The heat transfer composition of claim 11 wherein said at least one tetrafluoropropene (HFO-1234) consists essentially of compounds in which the unsaturated terminal carbon has not more than one F substituent.
13. The heat transfer composition of claim 10 wherein said at least one pentafluoropropene (HFO-1225) comprises at least one compound in which the unsaturated terminal carbon has not more than one F substituent.
14. The heat transfer composition of claim 13 wherein said at least one pentafluoropropene (HFO-1225) consists essentially of compounds in which the unsaturated terminal carbon has not more than one F substituent.
15. A method of transferring heat to or from a fluid or body comprising causing a phase change in a fluoroalkene of Formula I:

$$XCF_zR_{3-z} \quad (I)$$

where X is a C_2 or a C_3 unsaturated, substituted or unsubstituted, alkyl radical, each R is independently Cl, F, Br, I or H and z is 1 to 3.
16. The method of claim 15 wherein said fluoroalkene includes an unsaturated terminal carbon having not more than one F substituent.
17. The method of claim 16 wherein z is 3.
18. The method of claim 17 wherein at least one substituent on the unsaturated terminal carbon is not F.
19. The method of claim 18 wherein at least one substituent on the unsaturated terminal carbon is H.
20. The method of claim 16 wherein X is a C_2 alkyl radical.
21. The method of claim 16 wherein Y is CF_3 and X is a C_2 alkyl radical.
22. A foamable comprising a polyol and a blowing agent comprising at least one fluoroalkene of Formula I:

$$XCF_zR_{3-z} \quad (I)$$

where X is a C_2 or a C_3 unsaturated, substituted or unsubstituted, alkyl radical, R is independently Cl, F, Br, I or H, and z is 1 to 3.

23. The foamable composition of claim 22 wherein said blowing agent has a Global Warming Potential (GWP) of not greater than about 150.

24. The foamable composition of claim 22 wherein said blowing agent has a Ozone Depleting Potential (ODP) of not greater than about 0.05.

25. The foamable composition of claim 22 wherein said fluoroalkene includes an unsaturated terminal carbon having not more than one F substituent.

26. The foamable composition of claim 22 wherein said fluoroalkene includes an unsaturated terminal carbon and at least one substituent on the unsaturated terminal carbon is H.

27. A closed cell foam comprising a polymer foam formulation including a blowing agent, said blowing agent comprising at least one fluoroalkene of Formula I:

$$XCF_zR_{3-z} \quad (I)$$

where X is a C_2 or a C_3 unsaturated, substituted or unsubstituted, alkyl radical, each R is independently Cl, F, Br, I or H and z is 1 to 3.

28. A foam premix composition comprising polyol and a blowing agent comprising at least one fluoroalkene of Formula I:

$$XCF_zR_{3-z} \quad (I)$$

where X is a C_2 or a C_3 unsaturated, substituted or unsubstituted, alkyl radical each R is independently Cl, F, Br, I or H and z is 1 to 3.

29. A method of forming a foam comprising adding to a foamable composition a blowing agent comprising at least one fluoroalkene of Formula I:

$$XCF_zR_{3-z} \quad (I)$$

where X is a C_2 or a C_3 unsaturated, substituted or unsubstituted, alkyl radical, each R is independently Cl, F, Br, I or H
and z is 1 to 3.

30. The method of claim 29 wherein said fluoroalkene includes an unsaturated terminal carbon having not more than one F substituent.

31. A cleaning composition comprising at least one fluoroalkene of Formula I:

$$XCF_zR_{3-z} \quad (I)$$

where X is a C_2 or a C_3 unsaturated, substituted or unsubstituted, alkyl radical, R is independently Cl, F, Br, I or H, and z is 1 to 3, said heat transfer composition having a Global Warming Potential (GWP) of not greater than about 150.

32. The cleaning composition of claim 31 wherein said GWP is not greater than about 100.

33. The cleaning composition of claim 31 having an Ozone Depleting Potential (ODP) of not greater than about 0.05.

34. The cleaning composition of claim 31 wherein said fluoroalkene includes an unsaturated terminal carbon having not more than one F substituent.

35. The cleaning composition of claim 31 wherein said fluoroalkene includes an unsaturated terminal carbon and at least one substituent on the unsaturated terminal carbon is H.

36. A method of cleaning a contaminant from an article comprising contacting said article with a composition comprising at least one fluoroalkene in accordance with Formula I:

$$XCF_zR_{3-z} \quad (I)$$

where X is a C_2 or a C_3 unsaturated, substituted or unsubstituted, alkyl radical, R is independently Cl, F, Br, I or H, and z is 1 to 3.

37. The method of claim 36 wherein said fluoroalkene includes an unsaturated terminal carbon having not more than one F substituent.

38. A flame suppression composition comprising at least one fluoroalkene of Formula I:

$$XCF_zR_{3-z} \quad (I)$$

where X is a C_2 or a C_3 unsaturated, substituted or unsubstituted, alkyl radical, R is independently Cl, F, Br, I or H, and z is 1 to 3, said flame suppression composition having a Global Warming Potential (GWP) of not greater than about 150.

39. The flame suppression composition of claim 38 wherein said GWP is not greater than about 100.

40. The flame suppression composition of claim 38 having an Ozone Depleting Potential (ODP) of not greater than about 0.05.

41. The flame suppression composition of claim 38 wherein said fluoroalkene includes an unsaturated terminal carbon having not more than one F substituent.

42. The flame suppression composition of claim 38 wherein said fluoroalkene includes an unsaturated terminal carbon and at least one substituent on the unsaturated terminal carbon is H.

43. A method of suppressing a flame comprising applying to at least a portion of the flame or to the fuel source for the flame at least one fluoroalkene in accordance with Formula I:

$$XCF_zR_{3-z} \quad (I)$$

where X is a C_2 or a C_3 unsaturated, substituted or unsubstituted, alkyl radical, R is independently Cl, F, Br, I or H, and z is 1 to 3.

44. The method of claim 43 wherein said fluoroalkene includes an unsaturated terminal carbon having not more than one F substituent.

45. A compatibalizing composition for improving the compatibility of a heat transfer fluid and a lubricant, said compatibalizing composition comprising at least one fluoroalkene of Formula I:

$$XCF_zR_{3-z} \quad (I)$$

where X is a C_2 or a C_3 unsaturated, substituted or unsubstituted, alkyl radical, R is independently Cl, F, Br, I or H, and z is 1 to 3, said compatibalizing composition having a Global Warming Potential (GWP) of not greater than about 150.

46. The compatibalizing composition of claim 45 wherein said GWP is not greater than about 100.

47. The compatibalizing composition of claim 45 having an Ozone Depleting Potential (ODP) of not greater than about 0.05.

48. The compatibalizing composition of claim 45 wherein said fluoroalkene includes an unsaturated terminal carbon having not more than one F substituent.

49. The compatibalizing composition of claim 45 wherein said fluoroalkene includes an unsaturated terminal carbon and at least one substituent on the unsaturated terminal carbon is H.

50. A method of sterilizing an article comprising contacting said article with a composition comprising at least one fluoroalkene in accordance with Formula I:

$$XCF_zR_{3-z} \quad (I)$$

where X is a C_2 or a C_3 unsaturated, substituted or unsubstituted, alkyl radical, R is independently Cl, F, Br, I or H, and z is 1 to 3.

51. The method of claim 50 wherein said fluoroalkene includes an unsaturated terminal carbon having not more than one F substituent.

52. A method of reducing the flammability of a flammable composition comprising adding to the composition in an amount effective to substantially reduce the flammability of the composition at least one fluoroalkene in accordance with Formula I:

$$XCF_zR_{3-z} \quad (I)$$

where X is a C_2 or a C_3 unsaturated, substituted or unsubstituted, alkyl radical, R is independently Cl, F, Br, I or H, and z is 1 to 3.

53. The method of claim 52 wherein said fluoroalkene includes an unsaturated terminal carbon having not more than one F substituent.

54. A composition comprising:

(a) at least one fluoroalkene of Formula I:

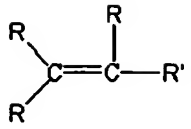
$$XCF_zR_{3-z} \quad (I)$$

where X is a C_2 or a C_3 unsaturated, substituted or unsubstituted, alkyl radical, each R is independently Cl, F, Br, I or H and z is 1 to 3; and

(b) at least one adjuvant selected from the group consisting of lubricants, compatibilizers, surfactants, solubilizing agents, dispersing agents, cell stabilizers, cosmetics, polishing agents, medicaments, cleaners, fire retarding agents, colorants, chemical sterilants, stabilizers, polyols, polyol premix components and combinations of two or more of these.

55. The composition of claim 54 having a Global Warming Potential (GWP) of not greater than about 150.

56. The composition of claim 55 wherein said at least one fluoroalkene is a compound of Formula II:



(II)

where each R is independently Cl, F, Br, I or H

R' is $(CR_2)_nY$,

Y is CRF_2

and n is 0 or 1.

57. The composition of claim 56 wherein Y is CF_3.

58. The composition of claim 56 wherein at least one R on the unsaturated terminal carbon is not F.

59. The composition of claim 56 wherein at least one R on the unsaturated terminal carbon is H.

60. A heat transfer composition comprising the composition of claim 54 wherein said adjuvant includes at least one lubricant.

61. A heat transfer composition comprising the composition of claim 54 wherein said adjuvant includes at least one compatibilizer.

62. The heat transfer composition of claim 61 wherein said compound of Formula I is present in an amount of at least about 50% by weight and said lubricant is present in an amount of at least about 30% by weight.

63. A blowing agent comprising the composition of claim 54 wherein said adjuvant includes at least one cell stabilizer.

64. A blowing agent comprising the composition of claim 54 wherein said compound of Formula I is present in an amount of from about 30% to about 50% by weight.

65. A sterilant composition comprising the composition of claim 54 wherein said adjuvant includes at least one chemical sterilant.

66. A composition according to claim 54 having no substantial acute toxicity.

67. A composition according to claim 54 having a low acute toxicity wherein said compound of Formula I consists essentially of one or more compounds wherein said fluoroalkene includes an unsaturated terminal carbon having not more than one F substituent.

68. A composition according to claim 54 having a low acute toxicity wherein said compound of Formula I consists essentially of one or more compounds wherein said fluoroalkene wherein said fluoroalkene includes an unsaturated terminal carbon and at least one substituent on the unsaturated terminal carbon is H.